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54 A system for transferring quickly and reliably to a centrally located monetary institution at least the value of valuable documents.

57 A system for transferring reliably at least the value of valuable documents to a monetary institution, thereby to enable customers to obtain more advantageous interest conditions and enabling banknotes to be handled more quickly and more simply within the monetary institution. The system includes terminals (11, 12, ...16) provided with means for writing into cassettes (131, 141) information concerning the banknote-content of the cassettes. The system further comprises equipment (10) which is located in the monetary institution and provided with means (101) for recording information previously written into the cassettes.

The cassettes used are of the kind which can be unlocked solely within the confines of the monetary institution.

The equipment (10) in the monetary institution is provided with banknote outfeed means (103) for feeding banknotes from cassettes (131, 141) inserted in the equipment and for identifying the value of dispensed banknotes and comparing the result of this identification with the aid of registering means (101) which reads information from the cassettes (131, 141).

Description

A SYSTEM FOR TRANSFERRING QUICKLY AND RELIABLY TO A CENTRALLY LOCATED MONETARY INSTITUTION AT LEAST THE VALUE OF VALUABLE DOCUMENTS

TECHNICAL FIELD

The present invention relates to a system for transferring at least the value of valuable documents quickly and reliably to a central monetary institution, and more specifically for such transfer from a plurality of mutually dispersed terminals to central equipment assigned to a monetary institution, said transfer being effected with the aid of cassettes of particular construction.

BACKGROUND PRIOR ART

US Patent Specification Serial No 4 283 097 for instance teaches a cassette which is so constructed that when withdrawn from a casing the cassette is in a closed and locked mode, but in which a locking device is moved from a locking to a non-locking position when inserting the cassette into the casing, so as to enable the contents of the cassette to be removed therefrom.

A system for handling valuable documents within a monetary institution with the use of cassettes is previously known to the art, e.g., from European Patent Specification 0030413. The system is constructed so that when a cassette is inserted into a device or banknotes are inserted into the cassette, information to this effect is transmitted to a data processor, thereby providing information at a central station information concerning the location and contents of the cassettes, the account balance of the customer, etc.

Although cassettes and systems of this kind function satisfactorily per se, there is a general desire to manage such cassettes and systems more effectively and in a more rational manner, so as to improve the interest earned by the valuable documents involved, both on the part of the monetary institutions and their customers, and also to reduce the personnel required for routine work in, e.g., banks.

SUMMARY OF THE INVENTION

In a system for transferring the value of valuable documents from a plurality of terminals to a central monetary institution, each terminal is provided with means for reading into cassettes information or data relating to the identity and the contents of said cassettes. The monetary institution is provided with means for registering and recording information or data previously read into cassettes. Cassettes intended for the monetary institution concerned are intended to be unlocked solely within the confines of the monetary institution. The terminals may be relatively simple in the case of small customers and more complex in the case of large customers, e.g. chain stores, large purchasing bodies and the like.

The characteristic features of a system con-

structed in accordance with the invention are set forth in the following claims.

DESCRIPTION OF PREFERRED EMBODIMENTS

The present invention will now be described in more detail with reference to the accompanying drawing, which illustrates schematically an exemplifying embodiment of an inventive system.

The illustrated system comprises a multiple of mutually dispersed terminals 11, 12, 13, 14, 15, 16, and centrally located master equipment 10 assigned to a monetary institution.

Each terminal is provided with means for writing into cassettes electronically information relating to the valuable-document content of the cassettes. Thus, the terminal 13, by way of example, has a write-in means 133 for automatically writing information into cassette 131 in conjunction with the insertion of banknotes into the cassette, and the terminal 14 has means in the form of a keyboard 142 for writing information in the cassette 141 (relating to the number of banknotes and their identification) subsequent to charging and locking the cassette. The master equipment 10 includes registering means 101 which are operative in registering the information previously written into the cassettes. As will be described in more detail hereinafter, this registration can be effected in two ways, either through data transmission from the terminal, e.g. the terminal 13, or by direct transfer from cassette (161) located in its intended position in the equipment 10. The information may also be inserted manually into the main equipment, subsequent to being told the information over the telephone from the terminal in question.

At least some of the terminals, e.g., the terminals 11, 12, 13, are intended for large businesses and are provided with infeed means 130 for feeding valuable documents (banknotes) through an opening 135 in a cassette 131 connected to the infeed means, and also with transfer means 134 for transferring to the main master equipment 10 of the monetary institution information concerning the identity of the cassette and its content of banknotes subsequent to termination of the infeed process.

The infeed means 130 comprises, in a known manner, rollers and guide rails for transporting the banknotes singly passed identifying and counting means 136, to the infeed opening of the cassette. Information-concerning the number of banknotes and their denomination from the means 136 and cassette identification either punched-in through the keyboard or entered directly from the cassette concerned (broken-line conductor) - is collected in a register 133 and transmitted via transmission means 134, which may be connectable to data channels on telephone subscriber lines. This information arrives at the registering means 101 and is stored in said means for future processing.

The cassettes (e.g. 131) used in conjunction with these terminals 11, 12, 13, are so constructed that when a cassette is connected to a terminal (e.g. terminal 13) and insertion of banknotes and subsequent removal from the terminal is completed the cassettes can be unlocked solely within the confines of the monetary institution, e.g. by positioning the cassette in an intended location in the master equipment 10, or by manually unlocking the cassette by an authorized person.

At least some of the terminals, e.g. the terminals 14, 15, 16, are intended for smaller businesses, the information write-in means of these terminals having the form of a keyboard. Thus, the terminal 14 is provided with a keyboard 142 by means of which information can be written into a cassette 141, said cassette being of the kind which can be opened solely within the confines of the monetary institution. The cassette may either be opened automatically by electronic means or with the aid of a key by an authorized person.

A business-account owner who wishes to make a deposit places valuable documents (banknotes) into the cassette and inserts information into the cassette memory 1410 (circuit card) relating to the value of the deposit with the aid of the keyboard 142, and then phones the monetary institution concerned and informs the institution of the magnitude of the deposit and the account number, and closes the cassette, which is therewith locked automatically and cannot later be opened by the account owner and is either deposited temporarily in a night safe or sent to the monetary institution concerned. When the cassette is received at the monetary institution, the cassette is unlocked electronically and emptied while, at the same time, counting (verifying) the contents of the cassette and comparing these contents with the information stored in the cassette memory 1410. Depending on the design of the equipment installed in the monetary institution, this emptying of the cassette and verification of its contents can be carried out by the account owner himself (customer operated equipment) or by a cashier (cashier operated equipment).

The drawing shows in broken lines one end of a cassette 111 positioned in the master equipment 10, this cassette originating from the terminal 11 and which, when placed in the equipment 10, is automatically unlocked and connected mechanically to dispenser means 103 for emptying the cassette, and connected electronically to registering means 101 for identifying the cassette. Subsequent to emptying the cassette, the cassette is removed by the account owner, the cassette thus being relocked and ready for use for a new deposit.

It can be agreed between account owner and the monetary institution that, when an account owner has removed a cassette from its terminal and the cassette therewith locked (the case with, e.g., the terminal 13) or has closed a cassette subsequent to having inserted banknotes therein, checks manually (the case of, e.g., the terminal 14) and, furthermore, has informed the monetary institution of the deposit, either electronically or in some other way, the valuable documents are then the property of the

monetary institution, which can thus in reality work with the documents despite the fact that they are not physically in the possession of the institution. Consequently, the account owner can be credited with interest for his deposit from an earlier date than would otherwise be possible, while handling of the documents by the monetary institution is quicker and simpler.

In the case of the aforescribed embodiment of the inventive system cassettes are emptied of their contents in the master equipment 10 of the monetary institution (the bank). It is conceivable, however, for cassettes which are delivered to the monetary institution not to be emptied immediately, but instead to be utilized in banknote dispensing devices assigned to the monetary institution, subsequent to recording the information written into the cassettes. This is made possible by the accuracy and reliability with which available banknote feed devices, banknote identifying devices and banknote counting devices now operate. This enables the time-consuming task of manually counting, sorting and feeding banknotes to be avoided, and the time normally spent in such tasks to be utilized more than efficiently in carrying out more qualified bank tasks. The drawing illustrates the manner in which a cassette 161 arriving from the terminal 16 is placed in its intended position in the equipment 10 of the monetary institution, where information read from the circuit card of the cassette 161 by read-out means 104 is recorded in the registering means 101. This cassette can then be used in a banknote dispenser, or cash dispenser, intended for the public without needing to first empty the cassette of its banknote content.

It will be understood that the described and illustrated exemplifying embodiment of the inventive system can be modified in various ways within the scope of the invention as defined in the following claims. Certain of these conceivable modifications will be described briefly in the following passages.

In the foregoing it has been disclosed that information relating to cassettes and their contents can be transmitted to the master equipment, by data transmission from respective terminals, by direct transmission from cassettes positioned in their respective intended locations in the master equipment, or by passing this information onto the monetary institution from the terminal concerned and manually inserting said information into the master equipment in response to a telephone message from the terminal.

In addition hereto, it is also conceivable to transfer information by activating (inquiry) from the master equipment, by telephone or data link, preferably a plurality of terminals in a predetermined sequence and at given times. This would result in savings in material costs and enhance security on the part of the monetary institution.

It is also stated in the foregoing that the cassettes can only be unlocked within the confines of the monetary institution. Positioning of cassettes in their respective intended locations in the master equipment 10 and manual unlocking of the cassettes by authorized personnel have been given as exam-

ples of how such cassettes can be unlocked.

This latter alternative can be carried out by providing a terminal, e.g. the terminal 13, with an internal safe which will accommodate a plurality of cassettes and which can be opened solely by authorized personnel (e.g. bank personnel/security personnel) as distinct from other personnel managing the terminal. This provides further security against robbery.

It is also stated in the foregoing that a cassette arriving at the monetary institution need not necessarily be emptied immediately in said institution, but can be utilized later in a banknote dispensing machine (e.g. a cash-point dispenser). It is also conceivable, however, for an account holder to transmit to the master equipment 10, via his terminal, e.g. the terminal 13, information relating to the identity of the cassette and the contents thereof, and then to place the closed and locked cassette in a banknote dispensing machine, optionally belonging to the account holder himself, this machine being connected electronically to the master equipment.

This will reduce the number of occasions where the banknotes need to be transported, which in turn reduces transportation and administration costs and enhances security against robbery, while maintaining the aforesaid benefit of early interest on the part of the account owner and also making cash available to the monetary institution (through the information concerning the value of the cash available).

Claims

1. A system for reliably transferring at least the value of valuable documents from a plurality of dispersed terminals to a centrally located equipment assigned to a monetary institution, this transfer being effected with the aid of cassettes of particular construction, characterized in that each terminal (11, 12, ...16) is provided with means (133, 142) for writing electronically into cassettes (131, 141) information relating to the valuable document content of the cassettes; in that the centrally located equipment (10) is provided with registering means (101) for registering information previously written in to cassettes connected to the registering means (101); and in that cassette (131, 141) intended for transfer within the institution are constructed in a manner which enables the cassettes to be unlocked solely in connection with the monetary institution.

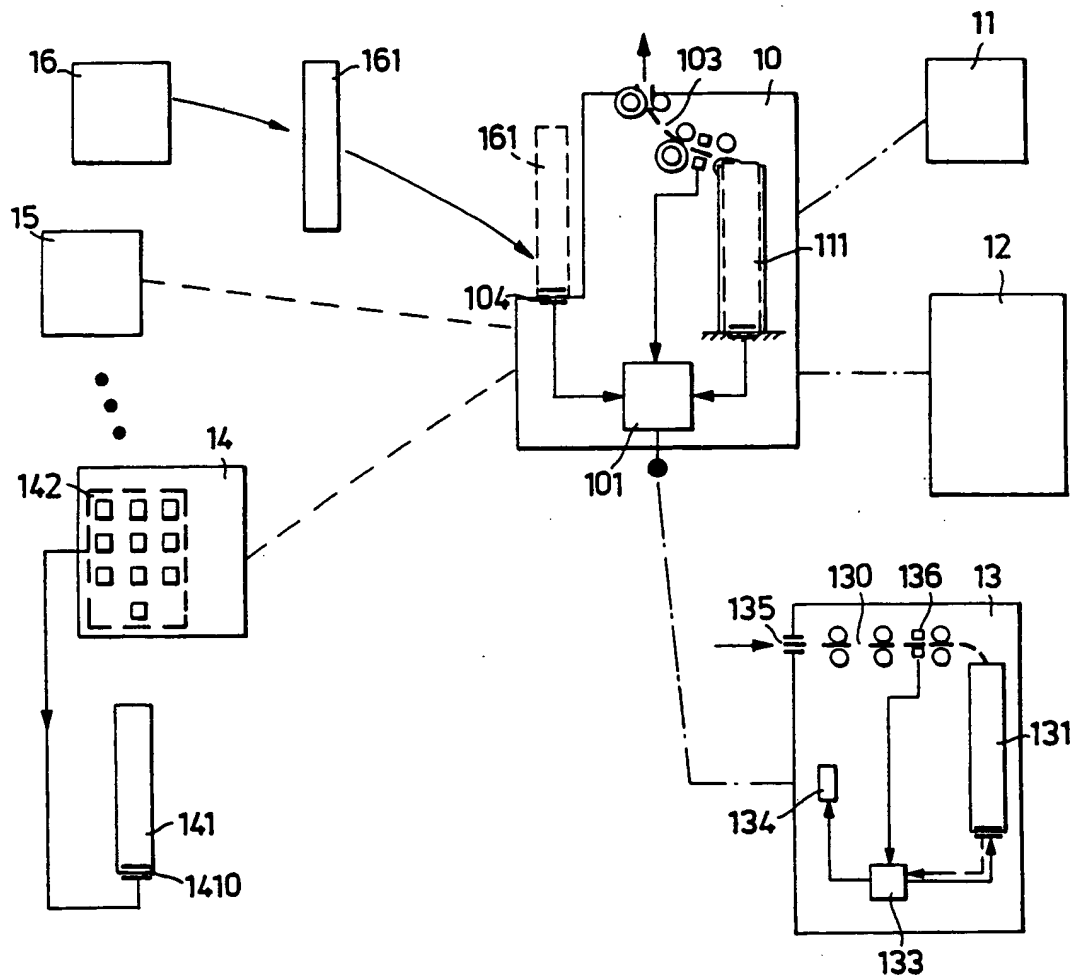
2. A system according to Claim 1, characterized in that at least some of said terminals (e.g. 13) are provided with infeed means (130) for feeding valuable documents into a cassette (131) connected to the infeed means (130), and with transfer means (134) for transferring to the monetary institution (10) information relating to the identity of the connected cassette (131) and the valuable-document content of the cassette upon completion of the infeed process; and in

that said at least some terminals (13) and associated cassettes (131) are so constructed that a cassette (131) which is connected to a respective terminal (13) is automatically closed and locked upon its removal from the terminal (13).

3. A system according to Claim 1, characterized in that the means for writing-in information in at least some of said terminals (e.g. 14) has the form of a keyboard (142); and in that cassettes (e.g. 141) intended for use in said at least some terminals are constructed to be locked automatically when closing the cassettes.

4. A system according to any of Claims 1-3, characterized in that the centrally located equipment (10) is provided with dispensing means (103) for dispensing valuable documents from a cassette (e.g. 111) connected to the dispenser (103) and for identifying the value of the valuable documents dispensed from said cassette and comparing the result of this identification with information written into the cassette (111) by the registering means (101).

5. A system according to Claim 2, characterized in that said at least some terminals (e.g. the terminal 13) is provided with an internal safe which will accommodate one or more cassettes and which can be unlocked solely by persons other than the ordinary managing personnel of the respective terminals.



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EUROPEAN SEARCH REPORT

Application number

EP 88850233.3

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
A	<u>EP - A2 - 0 041 457</u> (SERRES et al.) * Totality * --	1	G 07 F 9/06 G 07 D 1/00
A	<u>EP - A2 - 0 109 758</u> (MARS INCORPORATED) * Totality * --	1	
A	<u>EP - A2 - 0 164 733</u> (OMRON TATEISI ELECTRONICS CO) * Totality * --	1	
A	<u>US - A - 4 459 052</u> (LUNDBLAD) * Totality * --	1	
A	<u>US - A - 3 825 729</u> (MENKE) * Totality * --	1	
D, A	<u>US - A - 4 283 097</u> (LUNDBLAD) * Totality * --	1	TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
D, A	<u>EP - A1 - 0 030 413</u> (LUNDBLAD) * Totality * ----	1	G 07 D 1/00 G 07 F 7/00 G 07 F 9/00
The present search report has been drawn up for all claims			
Place of search VIENNA		Date of completion of the search 22-11-1989	Examiner BEHMER
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date O : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	